8 Structure of a (fairly typical) X client

An X client's window(s) is (are) typically composed of a nested set of "widgets" — the building blocks of a window.

For example, consider `xedit`:

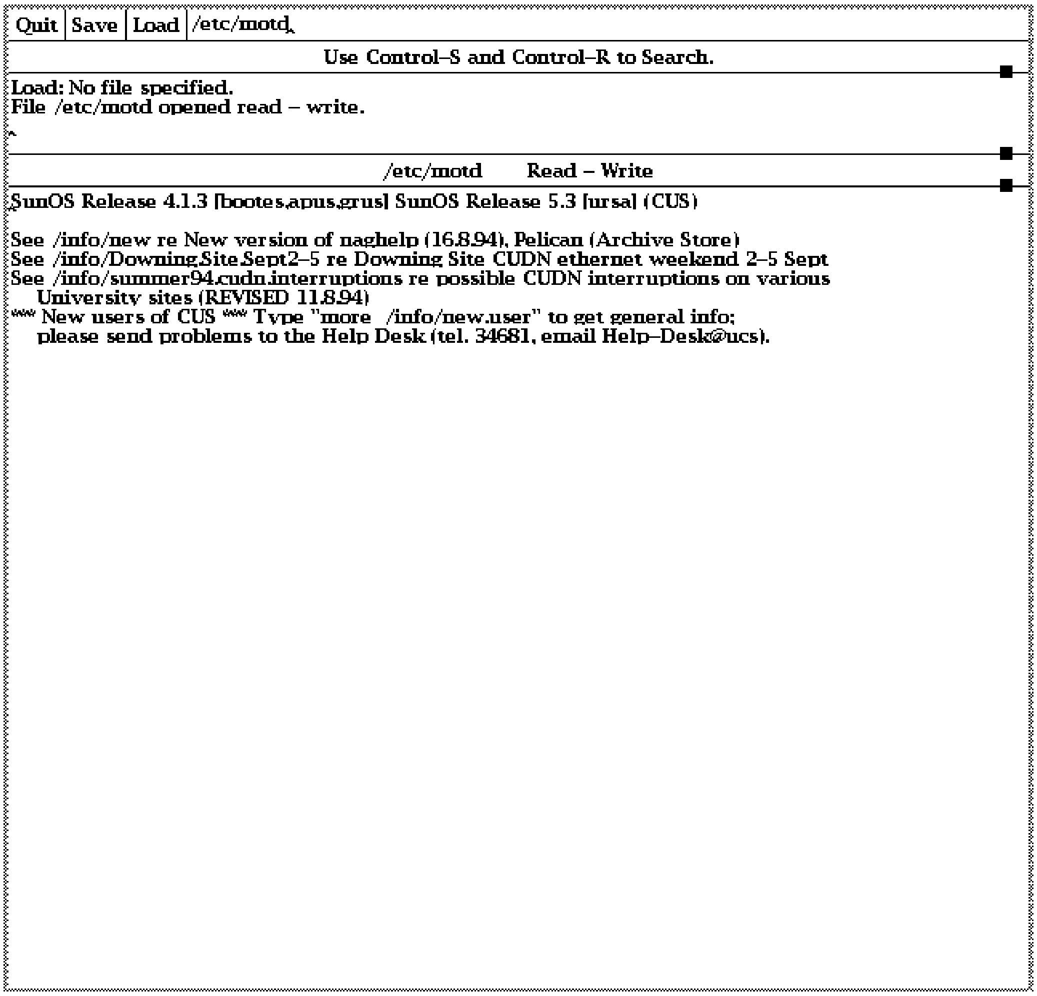

Figure 6: `xedit` applied to `/etc/motd`

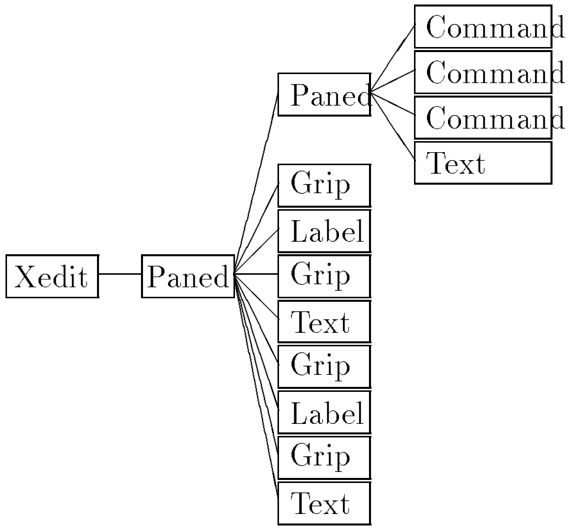

Figure 7: Widget tree of `xedit` labelled by class name

- The top-level widget is called the "shell widget" and exists solely to control a widget called a "container widget". The user controls this shell widget which has no visible manifestation.
- Container widgets exist to hold other widgets in a determined layout. `xedit`'s container widget is a "`Paned`" widget and is configured to hold a vertical stack of other widgets:
  - a "`Paned`" widget which will hold the horizontal row of buttons
  - a pair of "`Label`" widgets which are used to hold fixed text — the search instructions and the file name
  - two "`Text`" widgets which contain `xterm`'s diagnostic output and the text being edited
  - a set of "`Grip`" widgets for resizing the heights of the various bits
- This latter `Paned` in turn holds four subwidgets:
  - three "`Command`" widgets ("`quit`", "`save`" and "`load`")
  - a `Text` widget (for the user to enter file names)

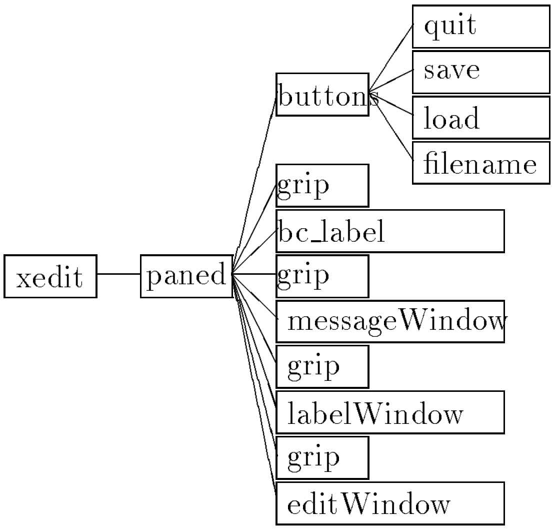

Figure 8: Widget tree of `xedit` labelled by instance name

Some points regarding widget names:

- Each of these (sub)widgets has a name specific to that class of widget called its "class name". For example, *all* `Paned` widgets have the class name "`Paned`". The widgets are typically refered to by their class name, as has been happening here so far.
- Each also has a name given to it by its parent widget called its "instance name" to distinguish it from any other subwidgets of the same class.
- The top-level, shell widget can have its instance name set by the user with the option "`-name` *instance-name*". It defaults to the class name in lower case. The shell window's class name is fixed by the client's author.
- The instance names of subwidgets of a particular widget are typically chosen to be different from one another so that the sequence of widget instance names leading to a particular widget uniquely defines that widget.